Please cancel claim 28 and 29 without prejudice.

Please amend claims 30 and 31 to read as follows:

30. (Amended) A computer-readable medium comprising: instruction and data written thereon, said instructions and data containing information to execute on a processor for the practice of the method of claim 8 or claim 12 or claim 14 or claim 17 or claim 25 or claim 34 or claim 35 or claim 36.

31. (Amended) Electromagnetic signals traveling over a computer network comprising: said electromagnetic signal carrying information to execute on a processor for the practice of the method of claim 8 or claim 12 or claim 14 or claim 17 or claim 25 or claim 34 or claim 35 or claim 36.

Please add new claims 34 et seq.

34. A method for estimating a length of tape on a reel, comprising:

a. choosing a variable to be measured, said variable related to estimating a length of tape on a reel;

b. selecting a minimum and maximum acceptable measurement value of said variable;

c. selecting a maximum acceptable variance of said variable;

d. recording an individual measurement;

e. determining if said individual measurement's variance is greater than said maximum acceptable variance;

f. determining if a three sigma-interval around said individual measurement is not at least partially included within an interval from said minimum to said maximum acceptable measurement values;

if the determinations in steps e OR f prove true, ignoring the individual measurement and basing the current Kalman filter estimate on other measurements and on previous Kalman filter estimates.

35. A method for estimating a length of tape on a reel, comprising:

a. choosing a variable to be measured, said variable related to estimating a length of tape on a reel;

b. selecting a minimum and maximum acceptable measurement value of said variable;

c. selecting a maximum acceptable variance of said variable;

d. recording an individual measurement;

e. determining if said individual measurement's variance is greater than said maximum acceptable variance;

if the determination in step e proves true, ignoring the individual measurement and basing the current Kalman filter estimate on other measurements and on previous Kalman filter estimates.

36. A method for estimating a length of tape on a reel, comprising:

a. choosing a variable to be measured, said variable related to estimating a length of tape on a reel;

b. selecting a minimum and maximum acceptable measurement value of said variable;

c. selecting a maximum acceptable variance of said variable;

d. recording an individual measurement;

e. determining if a three sigma-interval around said individual measurement is not at least partially included within an interval from said minimum to said maximum acceptable measurement values;

if the determination in step e proves true, ignoring the individual measurement and basing the current Kalman filter estimate on other measurements and on previous Kalman filter estimates.

37. The method of claim 34 or claim 35 or claim 36 further comprising:

choosing as said variable an angular position of said reel.

38. The method of claim 34 or claim 35 or claim 36 further comprising:

choosing as said variable an angular position of a second reel upon which said tape is wound.

39. The method of claim 34 or claim 35 or claim 36 further comprising:

choosing as said variable an angular position of a transducer, said transducer responsive to movement of said tape.

40. The method of claim 39 further comprising:

choosing said transducer to measure an angular position of a capstan, said tape in contact with said capstan, said capstan rotating as said tape moves.

41. The method of claim 39 further comprising:

choosing said transducer to measure an angular position of a tension arm in contact with said tape.